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Appendix A

The Data

1. UNITED STATES EXPORTS, TOTAL VALUE, 1879-1959

(TABLE A-1)

Source: Department of Commerce

1879-1914: *Monthly Summary of Commerce and Finance*, December 1912, pp. 770-776; December 1915, p. 59.

1920-38: *Foreign Commerce and Navigation of the United States*, 1929, Vol. I, p. xvi; 1946, Vol. I, part A, p. 2.

1945-50: *Summary of Foreign Commerce of the United States*.

1951-59: *Summary Report, United States Foreign Trade*, F.T. 900 E, and *Statistical Reports of the World Trade Information Service*.

Description of the Official Series Used

The series represents the dollar value of monthly general exports excluding military grant aid shipments.

The term "general" exports means that re-exports of foreign merchandise are included. Re-exports are a very small fraction of total exports.

Military grant aid is excluded beginning with the third quarter of 1950, i.e., from the date at which a series excluding it is first available. Exports excluding military grant aid have lately been termed "commercial exports."

Exports are valued at current prices at the place of exportation.

Our Adjustments of the Basic Series

For the years 1933-38 current dollars have been converted into "dollars of 1930 parity" or pre-devaluation dollars. This was done for compara-

Appendix A

bility to world trade which was measured in such dollars until World War II. The main effect of this adjustment is that the large rise in the current dollar value of exports in 1933-35, which was due mainly to the change in the unit of account, appears smaller in our series. This adjustment does not apply to the export-output comparisons in Chapter 2, which are in current dollars.

A very minor adjustment was made in the first quarter of 1957. We raised the value of exports by \$30 million, an amount which the Department of Commerce has shifted to the following quarter. Since our series ends soon thereafter, we preferred its continuity to its improvement. Later quarters are not affected by this.

Exports were adjusted for seasonal variation by the National Bureau staff.

Deficiencies of the Data

Deficiencies of United States export statistics are described by Dudley J. Cowden in *Measures of Exports of the United States* (New York, 1931) and by Matthew Simon in *Trends in the American Economy in the Nineteenth Century* (Studies in Income and Wealth, Volume Twenty-four, Princeton for NBER, 1960).

The most important limitations are: the inaccuracies of early export returns; the timing of the early monthly data, which may sometimes represent the values compiled in a given month rather than the values exported in that month; and the omission or incomplete inclusion of exports by rail to Canada and Mexico before 1915.

We did not attempt to allow for the deficiencies since data with which to make corrections are not available. Estimates of exports by rail have been compiled by Matthew Simon for fiscal years 1879-93. They amount in most years to 1 or 2, and always to less than 3, per cent of total exports, and their inclusion improves the accuracy of the general level of the series. For our purpose, however, these estimates are not suitable because they are annual, not quarterly, and because even their annual movements do not seem sufficiently reliable for cyclical analysis. Exports by rail are taken to be the differences between imports from the United States as reported by Canada and exports to Canada as reported by the United States. These differences between the relatively stable Canadian series and the more violently fluctuating American series are in most years inversely correlated with the latter and also with total exports. Thus it appears that exports by rail declined—sometimes to the vanishing point—when exports by ship, to Canada and to other countries, increased, which is rather unlikely. Hence it is not advisable to use these estimates in a context where their short-run movements count.

Appendix A

TABLE A-1

UNITED STATES EXPORTS Seasonally Adjusted Quarterly Totals at Annual Rates, 1879-1959 (million dollars)

Year and Quarter	Value of Exports	Year and Quarter	Value of Exports	Year and Quarter	Value of Exports
1879 I	686.0	1888 I	669.6	1897 I	997.6
II	713.6	II	662.0	II	1,037.2
III	793.6	III	654.0	III	1,176.0
IV	793.2	IV	755.6	IV	1,168.4
1880 I	804.0	1889 I	793.6	1898 I	1,210.0
II	982.4	II	748.0	II	1,386.4
III	954.8	III	803.2	III	1,142.8
IV	852.8	IV	922.0	IV	1,276.4
1881 I	893.2	1890 I	859.2	1899 I	1,199.2
II	934.0	II	818.4	II	1,268.8
III	879.2	III	814.0	III	1,430.8
IV	686.4	IV	912.8	IV	1,234.0
1882 I	723.2	1891 I	915.2	1900 I	1,426.8
II	744.0	II	876.4	II	1,545.2
III	818.4	III	989.2	III	1,478.4
IV	781.2	IV	1,061.6	IV	1,474.8
1883 I	882.0	1892 I	1,053.6	1901 I	1,428.0
II	815.6	II	990.0	II	1,576.0
III	768.0	III	846.8	III	1,508.0
IV	729.2	IV	873.2	IV	1,386.4
1884 I	750.0	1893 I	762.8	1902 I	1,285.6
II	717.2	II	917.6	II	1,359.6
III	747.2	III	978.0	III	1,401.2
IV	770.0	IV	871.6	IV	1,378.8
1885 I	722.8	1894 I	866.4	1903 I	1,500.8
II	708.4	II	859.6	II	1,384.8
III	627.6	III	797.6	III	1,345.2
IV	683.6	IV	821.6	IV	1,637.2
1886 I	642.8	1895 I	769.2	1904 I	1,453.2
II	773.6	II	834.4	II	1,325.2
III	720.4	III	793.2	III	1,424.8
IV	725.2	IV	882.4	IV	1,542.4
1887 I	750.0	1896 I	918.4	1905 I	1,408.0
II	654.4	II	926.4	II	1,694.0
III	727.6	III	1,020.4	III	1,666.8
IV	718.8	IV	1,123.6	IV	1,731.2

Appendix A

TABLE A-1 (continued)

Year and Quarter	Value of Exports	Year and Quarter	Value of Exports	Year and Quarter	Value of Exports
1906 I	1,747.6			1927 I	4,869.6
II	1,810.0			II	5,082.4
III	1,753.6			III	4,836.8
IV	1,853.2			IV	4,702.0
1907 I	1,949.2			1928 I	4,877.2
II	1,946.8			II	5,146.0
III	1,812.8			III	5,012.0
IV	1,956.8			IV	5,446.8
1908 I	1,962.0	1920 I	8,552.0	1929 I	5,758.4
II	1,640.0	II	8,098.0	II	5,256.8
III	1,646.8	III	7,863.6	III	5,188.8
IV	1,678.4	IV	8,292.8	IV	4,836.4
1909 I	1,638.8	1921 I	5,944.8	1930 I	4,578.0
II	1,704.4	II	3,963.2	II	4,130.0
III	1,734.0	III	4,344.4	III	3,722.4
IV	1,826.0	IV	3,217.2	IV	3,086.0
1910 I	1,607.6	1922 I	3,480.8	1931 I	2,880.4
II	1,827.6	II	4,140.0	II	2,644.4
III	1,945.6	III	3,955.6	III	2,240.8
IV	2,068.8	IV	3,775.6	IV	2,020.8
1911 I	2,076.4	1923 I	3,991.6	1932 I	1,876.4
II	2,107.2	II	4,140.4	II	1,614.0
III	2,168.4	III	4,268.4	III	1,454.4
IV	2,049.2	IV	4,241.2	IV	1,502.4
1912 I	2,366.8	1924 I	4,473.6	1933 I	1,323.6
II	2,285.6	II	4,251.6	II	1,233.2
III	2,413.6	III	4,416.4	III	1,272.0
IV	2,522.8	IV	5,050.8	IV	1,286.0
1913 I	2,360.4	1925 I	5,142.4	1934 I	1,286.8
II	2,590.0	II	4,758.8	II	1,265.2
III	2,650.8	III	4,830.0	III	1,286.0
IV	2,415.2	IV	4,885.2	IV	1,184.8
1914 I	2,198.4	1926 I	4,560.4	1935 I	1,248.8
II	2,244.0	II	4,722.8	II	1,225.6
III	1,981.6	III	5,088.0	III	1,327.2
IV	2,078.4	IV	4,874.0	IV	1,476.8

Appendix A

TABLE A-1 (concluded)

Year and Quarter	Value of Exports	Year and Quarter	Value of Exports	Year and Quarter	Value of Exports
1936 I	1,368.0	1946 I	8,685.6	1953 I	12,042.0
II	1,427.6	II	9,136.8	II	12,052.4
III	1,418.8	III	10,146.0	III	12,620.0
IV	1,490.0	IV	11,234.0	IV	12,378.8
1937 I	1,690.4	1947 I	13,766.4	1954 I	11,436.0
II	2,026.4	II	14,643.6	II	13,453.6
III	2,068.4	III	14,704.4	III	12,661.2
IV	2,007.2	IV	14,665.6	IV	13,791.6
1938 I	1,965.6	1948 I	12,873.2	1955 I	13,982.8
II	1,897.2	II	12,115.2	II	13,592.4
III	1,732.8	III	12,672.0	III	14,672.8
IV	1,652.4	IV	13,019.6	IV	14,966.4
1939 I	1,663.6	1949 I	13,114.8	1956 I	15,846.8
		II	12,714.0	II	16,846.4
		III	11,617.2	III	17,648.4
		IV	10,666.4	IV	19,007.2
		1950 I	9,386.8	1957 I	20,532.0
		II	9,498.4	II	19,649.6
		III	10,147.2	III	19,356.0
		IV	10,997.6	IV	18,566.0
		1951 I	12,354.8	1958 I	16,302.4
		II	14,026.8	II	16,100.4
		III	14,700.0	III	16,418.4
		IV	14,852.4	IV	16,437.6
1945 I	10,646.8	1952 I	15,174.8	1959 I	15,362.8
II	10,981.2	II	13,302.4	II	15,639.2
III	9,251.6	III	12,027.2	III	17,469.2
IV	7,989.6	IV	12,277.2		

2. IMPORTS OF THE WORLD OUTSIDE THE UNITED STATES, 1880-1959 (TABLE A-2)

A continuous annual series on world trade is available only since 1924 and the first year for which there are quarterly data is 1929. By adjusting two German series which cover parts of the period, 1880-1923, and by bridging a five-year gap between them, we obtained an annual series in marks for 1880-1923. This series was converted into dollars and spliced

Appendix A

to the League of Nations series which starts in 1924. The annual series was then interpolated with quarterly series constructed for this purpose.

Annual Series, 1880-1928, Source and Derivation

1880-94: Neumann-Spallart, *Übersichten der Weltwirtschaft*, Berlin, 1885 to 1889, p. 736.

1891-1904: Since no series is available for 1895-99 and since the available series for the preceding and following years are based on somewhat different definitions of imports, we constructed two series to fill this gap, one an extension of the 1880-94 series, the other an extension of the 1900-13 series. Both series are summations of imports of about fifty individual countries, excluding the United States, listed in *Statistisches Jahrbuch* (Berlin, 1910 to 1913), and United States imports from *Monthly Summary of Commerce and Finance of the United States*, Depts. of Commerce and Labor, December 1910. A few data are from Neuman-Spallart, (*op. cit.*, pp. 738-739). A few more are our estimates. The first series uses general imports of Great Britain and some small countries, as does the Neumann-Spallart series which it extends. It was compiled for the period 1891-99. The second series covers 1895-1904, and uses special imports for the same countries, in conformity with the 1900-13 series, to which it is linked.

1900-13 and 1920-25: *Statistisches Jahrbuch*, Berlin, 1931 and 1933. Imports of 1900, 1905, and 1909-13 are given in this source. The average ratio of imports to total trade was determined for these years and applied to figures for total trade, which are the only ones given for the remaining years.

1924-28: League of Nations, *Review of World Trade*, 1937 and 1938.

Quarterly Interpolators, 1880-1928, Source and Derivation

1880-1923: Official monthly statistics of imports of the United States, Great Britain, France, and as far as available (1892-1913) Germany were converted into quarterly dollar series. To the sum of these was added that part of the exports of the three first-named countries which went to countries other than those mentioned. The inclusion of such exports in the import series is justified, since they represent imports of countries not otherwise included. The percentage of total world imports which is covered by this interpolator is remarkably stable from year to year, except for variations in the number of series included. It amounts to 54-57 per cent for 1880-91 (five series), 66-71 per cent for 1892-1904 (six series), 71-74 per cent for 1905-13 (seven series), and 62-66 per cent for 1920-23 (six series). The above-mentioned export series were prepared at the National Bureau

Appendix A

by Rollin F. Bennet in 1941. French exports by countries are available only from 1905 on.

To test the interpolator, we computed the corresponding series for the period for which quarterly League of Nations data are available, i.e., 1929-38, and compared the two series. Since their movements resembled each other closely we would have obtained good estimates of the total had we used the interpolator for this period. The residual (the part of the total not included in the interpolator) also shows movements similar to those of the interpolator. In only six out of thirty-eight quarters does the residual move in opposite direction to the interpolator. This justifies the assumption that underlies the method of interpolation employed, viz., that the movements of the residual and the interpolator are highly correlated.

As a further test, we compared the deviations of the interpolator and the residual series from straight-line interpolations of their respective annual totals. We found that these deviations lay in the same direction for both series in thirty of the thirty-three quarters covered. We considered these results sufficiently reassuring to forego computation of the degree of correlation between the two sets of deviations.

1924-28: The interpolator is the sum of the quarterly imports of nineteen countries covering from 74 to 75 per cent of world imports. Eighteen of the nineteen series are derived from monthly data in national currencies, published in *International Trade and Balances of Payments*, League of Nations, 1911-25 and later issues. The series for Argentina is from *El Comercio Exterior Argentine, 1920-30*, Argentine Republic, Estadística General.

National currencies were converted into dollars using exchange rates from *Banking and Monetary Statistics*, Federal Reserve Board, 1943, and from *International Statistical Yearbook*, League of Nations, 1928.

Quarterly Series, 1929-38

For this period the League of Nations published a quarterly index of world trade in its *Review of World Trade*. We converted this index into dollars of 1930 parity with the help of the annual dollar value of world trade in 1929 given in the same source. This source also provides annual ratios of world imports to world trade, which we used to derive the former from the latter.

Quarterly Series, 1948-59

1948-49: Quarterly world imports had to be derived from annual world imports in *Statistical Yearbook*, United Nations, 1952, and from quarterly

Appendix A

world exports given in *Monthly Bulletin of Statistics*, United Nations, 1950 and 1951.

1950-59: Quarterly world imports are published in *Monthly Bulletins* of the United Nations.

Exclusion of U.S. Imports and Seasonal Adjustment, 1880-1959

Over the full period, quarterly U.S. special imports (i.e., imports for home use) were deducted from world imports. For the period 1933-38, U.S. import values were converted into dollars of 1930 parity, otherwise they are in current dollars. The series was adjusted for seasonal variation after deducting U.S. imports.

TABLE A-2
IMPORTS OF THE WORLD OUTSIDE THE UNITED STATES
Seasonally Adjusted Quarterly Totals at Annual Rates, 1880-1959
(million dollars)

Year and Quarter	Value of Imports	Year and Quarter	Value of Imports	Year and Quarter	Value of Imports
1880 I	7,380	1885 I	7,212	1890 I	8,140
II	7,624	II	7,152	II	8,208
III	7,524	III	7,012	III	8,456
IV	7,348	IV	6,936	IV	8,412
1881 I	7,264	1886 I	6,792	1891 I	8,052
II	7,492	II	6,884	II	8,520
III	7,488	III	6,948	III	8,532
IV	7,636	IV	7,184	IV	8,872
1882 I	7,668	1887 I	7,064	1892 I	8,468
II	7,840	II	6,876	II	8,088
III	7,964	III	7,232	III	7,888
IV	7,840	IV	7,368	IV	7,776
1883 I	7,960	1888 I	7,220	1893 I	7,708
II	8,140	II	7,320	II	8,032
III	7,892	III	7,460	III	8,284
IV	7,960	IV	7,700	IV	7,992
1884 I	8,004	1889 I	7,936	1894 I	8,436
II	7,624	II	7,792	II	8,048
III	7,556	III	8,092	III	7,912
IV	7,416	IV	8,356	IV	7,868

Appendix A

TABLE A-2 (continued)

Year and Quarter	Value of Imports Segment A	Value of Imports Segment B	Year and Quarter	Value of Imports
1895 I	6,664	7,700	1900 I	9,504
II	7,136	8,244	II	9,512
III	7,312	8,456	III	9,316
IV	7,384	8,524	IV	9,536
1896 I	7,604	8,780	1901 I	9,156
II	7,420	8,556	II	9,452
III	7,432	8,564	III	9,408
IV	7,856	9,048	IV	9,260
1897 I	7,860	9,052	1902 I	9,312
II	7,764	8,988	II	9,472
III	7,848	9,016	III	9,636
IV	8,064	9,264	IV	9,708
1898 I	8,240	9,460	1903 I	10,156
II	8,452	9,696	II	9,956
III	8,388	9,624	III	10,208
IV	8,460	9,708	IV	10,484
1899 I	8,560	9,840	1904 I	10,332
II	8,836	10,156	II	10,268
III	9,024	10,380	III	10,384
IV	8,992	10,340	IV	10,856

Segment A continues 1900-13 series.

Segment B continues 1882-94 series.

Appendix A

TABLE A-2 (continued)

Year and Quarter	Value of Imports	Year and Quarter	Value of Imports	Year and Quarter	Value of Imports
1905 I	10,636	1914 I	17,584	1928 I	30,776
II	11,116	II	17,524	II	29,964
III	11,464			III	30,708
IV	12,016			IV	31,116
1906 I	11,908	1920 I	30,196	1929 I	31,300
II	12,732	II	32,896	II	32,020
III	12,428	III	32,784	III	31,808
IV	12,804	IV	26,880	IV	30,204
1907 I	13,328	1921 I	24,604	1930 I	28,992
II	13,708	II	20,068	II	27,020
III	13,744	III	20,000	III	25,468
IV	13,204	IV	18,880	IV	23,084
1908 I	12,756	1922 I	20,208	1931 I	20,568
II	12,304	II	21,848	II	20,016
III	12,548	III	22,600	III	18,676
IV	12,360	IV	22,464	IV	15,924
1909 I	12,692	1923 I	21,364	1932 I	13,560
II	13,084	II	23,360	II	13,136
III	13,668	III	22,440	III	12,068
IV	13,812	IV	23,288	IV	11,952
1910 I	14,000	1924 I	23,768	1933 I	11,416
II	14,832	II	24,992	II	11,252
III	14,852	III	25,028	III	11,440
IV	15,252	IV	27,916	IV	11,240
1911 I	15,752	1925 I	29,840	1934 I	11,160
II	15,704	II	28,236	II	11,052
III	15,576	III	28,964	III	11,008
IV	16,316	IV	28,964	IV	10,876
1912 I	16,704	1926 I	28,472	1935 I	10,648
II	16,596	II	26,572	II	10,900
III	17,840	III	27,964	III	11,036
IV	18,012	IV	28,200	IV	11,496
1913 I	17,684	1927 I	28,956	1936 I	11,332
II	18,108	II	29,644	II	11,536
III	18,220	III	29,968	III	12,020
IV	18,036	IV	30,144	IV	12,016

Appendix A

TABLE A-2 (concluded)

Year and Quarter	Value of Imports	Year and Quarter	Value of Imports	Year and Quarter	Value of Imports
1937 I	13,408	1950 I	46,052	1955 I	75,040
II	15,188	II	46,488	II	74,772
III	15,216	III	49,620	III	77,236
IV	14,452	IV	56,384	IV	79,660
1938 I	13,944	1951 I	63,044	1956 I	80,264
II	13,248	II	69,048	II	85,452
III	12,972	III	72,664	III	85,712
IV	12,520	IV	71,620	IV	86,876
1939 I	13,040	1952 I	74,532	1957 I	93,280
		II	69,084	II	95,808
		III	64,888	III	94,856
		IV	64,624	IV	89,644
1948 I	51,296	1953 I	63,220	1958 I	87,388
II	53,264	II	64,552	II	85,624
III	54,136	III	65,308	III	86,220
IV	57,676	IV	66,252	IV	87,276
1949 I	56,600	1954 I	65,900	1959 I	83,160
II	54,612	II	67,668	II	89,304
III	52,612	III	69,624		
IV	47,812	IV	70,972		